

Wheel Nuts

By G8MNY

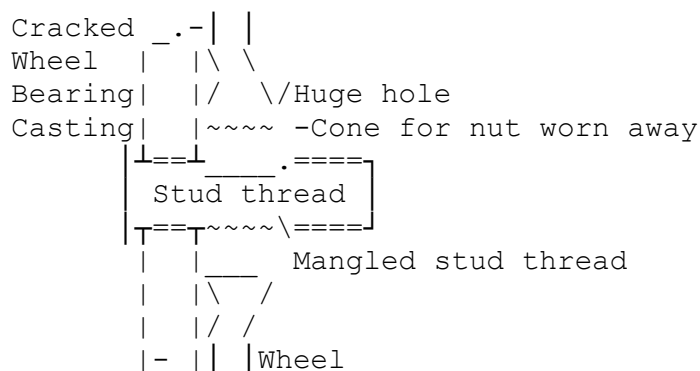
(Updated May 20)

(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

After seeing the remains of 2 wheels that have come off cars & trailers (non of them mine) in my time, here are some tips to make sure it does not happen to you.

LOOSE NUTS

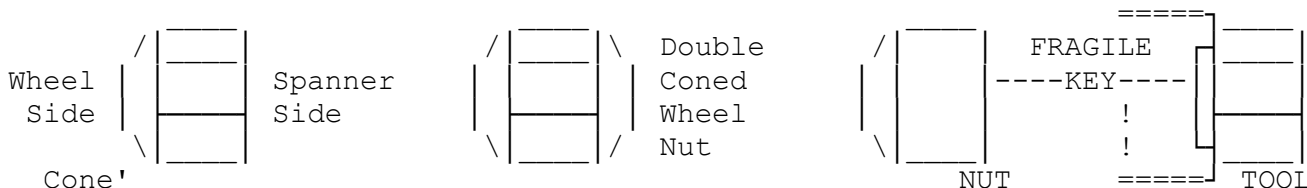
If the nuts get loose the wheel will move on the studs making a noise at slow speed (not heard if U have diesel or it is on a trailer). This movement will damage the wheel & in bad cases the studs.



If left unspotted, eventually the wheel nuts fall off & also the wheel. Then the real damage starts. e.g. bearing casting cracked, wheel break drum or disk smashed, suspension & or steering gear damaged, let alone you still being on the road!

CONICAL & SPHERICAL DOME NUTS (Lug Nuts)

Unlike other nuts wheel nuts are conically or dome shaped, this is to stop any movement of the wheel, as the self centring cones & gripping force take the load, not the wheel holes on the studs.



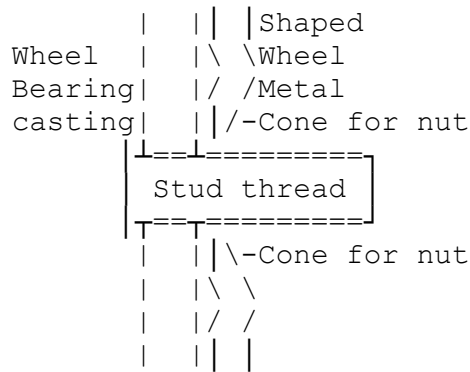
NEVER use the wrong nut type dome or conical types must engage with the matching impressions in the wheel, the wrong type can fracture a cast wheel! Keep removed nuts free of grit, but not leaving them on the ground.

Key Nuts are smooth cylinder on the outside, or have a rotatable collar. They have a fairly unique (1 in 500?) key shape cut into the end, that with a tight fitting matching key tool & it's other tube just about handle enough torque to undo them. Missing/broken key tool can be replaced if a dealer knows the No, or takes a photo of the key nut to order a match.

WHEEL HOLES

These are specially shaped steel stamping or castings that have the matching load carrying cone.

The actual threaded stud hole is bigger than the stud for ease of putting on the heavy wheel.



GREASE & TIGHTENING

Some makers suggest you do not oil/grease the nuts. But any experienced mechanic will tell you otherwise. Grease will not loosen a tightened nut! But it will stop corrosion & seizing of the nut, & it will ensure that the tightening force applied ends up forcing the wheel centring cone & nut together (gripping force) & not to a jammed up thread. Copper Slip is one of the best greases for this. Grease both the thread & the conical surface with a tiny dab.

Never have a load on the wheel when tightening, e.g. use a jack, as the loaded wheel may give the false impression it is tight.

Garages use air gun hammer spanners, they always seem to over tighten nuts, so if you ever want to undo an over-tightened nut, you had better grease them!

It is best to tighten wheel nuts in opposition, rather than just go around the wheel, this ensures the wheel centres properly. (From Greg VK2KGZ)

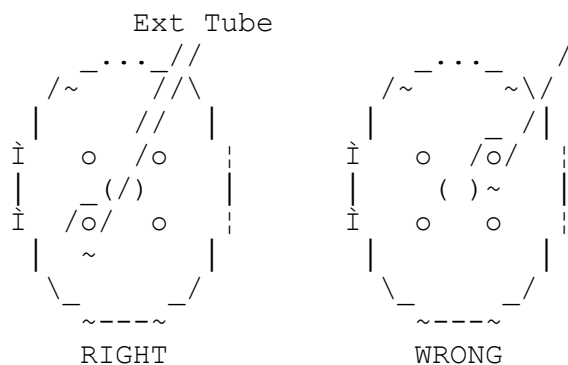
Typical tightening forces are 8-12 m-kg (60-90ft-lb).

JACKING POINTS

Re Garrage mechanics, I stopped one jacking up my van under the body sills, he was about to crush it with 1/3-1/2 ton of weight, He said it was the stongest part, so I showed him the reinforced jacking point attached to the heavy chassis sections designed for the job!

UNDOING NUTS

Make sure you know the thread & rotation direction, as some makes use LH & RH wheel nuts different on each side!



With the jack applied until only a small load is on the tire to stop rotation use a crank leaver socket (supplied) with an extension tube over it & apply force crossing over the wheel centre.

This gives less rotation force to the wheel than apply it on an outer nut, making it safer on the jack etc. Applying a thump or soft hammer blow may help but spanner flying off can be dangerous! A wheel brace cross spider can give a much more controlled way of applying the force but they are large.

If the nut is well seized on, first try a penetrating oil (brake contamination!) then try heat, either boiling water or gas torch (Hot safety! Fire Safety!)

Once all the nuts are loose, jack up to more to free the wheel & give alignment room when reseating the wheel.

Why don't U send an interesting bul?

73 De John, G8MNY @ GB7CIP